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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/879,815	06/13/2001	John Hardy Mosgaard Christensen	CHRISTENSEN1A	4286

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EXAMINER	
YAO, SAMCHUAN CUA	
ART UNIT	PAPER NUMBER
1733	

DATE MAILED: 11/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/879,815	MOSGAARD CHRISTENSEN ET AL.	
	Examiner	Art Unit	
	Sam Chuan C. Yao	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 October 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,7-9 and 23-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7-9 and 23-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-4, 7-9 and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art (APA) in view of Bair (US 5,135,787), either (LeVan (4,869,771) or Frankosky et al (US 5,225,242)), Kennette et al (US 4,612,226) and further in view of Bryson (US 4,927,582) for reasons of record set forth on 07-28-03 numbered paragraph 5, and optionally further in view of Makoui (US 5,128,082).

As for an added limitation of forming *"binder layers on the top and bottom of the web of cellulose fibers"*, in view of the similarity of the production processes between the modified process of the APA and the recited process, the added limitation must naturally flow from the modified process of the APA. In any event, it would have been obvious in the art to coat a latex binder onto opposing surfaces of an dry-laid cellulose fiber absorbent web such that binder layers are formed on opposing surface of the web as such is old in the art as exemplified in the teachings of Makoui (col. 1 lines 7-12; col. 2 lines 63-68; col. 4 lines 31-36; col. 5 lines 1-58; col. 7 lines 49-63; figures 1-2). NOTE: the added limitation as

presently recited does not preclude having a portion of a resin binder penetrating into an inner portion of a fiber web.

3. Claims 1-4, 7-9 and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Makoui (US 5,128,082) in view of Bair (US 5,135,787), either (LeVan (4,869,771) or Frankosky et al (US 5,225,242)), Kennette et al (US 4,612,226).

With respect to claim 1, Makoui, drawn to a process of making a dryformed absorbent web, substantially discloses the process recited in claim 1 (col. 4 line 31 to col. 6 line 28; col. 7 lines 49-54; figures 1-2). Makoui differs from claim 1 in that Makoui does not teach incorporating about 3-25 wt% of thermally-activated binder fibers to an absorbent web. However, it would have been obvious, to those versed in the art motivated by the desire to prevent or minimized fiber leakage, to incorporate about 10-25 wt% of thermally-activated binder fibers to an absorbent web of Makoui because: i) it is old in the art of making fibrous absorbent articles to form a non-woven fabric having cellulosic fibers, where a binder fiber and/or a binder resin is/are used to bond a fiber matrix as exemplified in the teachings of Bair (col. 4 line 46 to col. 5 line 25; figure 2; see col. 4 lines 53-60, in particular); and, ii) LeVan, directed to a process of forming a self-sustaining fibrous batt (web) having a sealed outer surface for a minimal fiber leakage, discloses (a) blending staple fibers with 10-25 wt% of binder fibers to form a staple/binder fibrous web, spraying a resin bonding agent onto the surface of the staple/binder fibrous web with a resin material to form a resin coated web

and then heat-treating the resin coated web to activate the binder fibers and the resin bonding agent (abstract, col. 2 lines 10- 1 5, lines 27-40); and (b) it is disadvantageous to use binder fibers alone or alternatively a resin bonding agent compared with combining both techniques together (col. 2 line 67 to col. 3 line 2). **Alternatively**, it would have been obvious, to those versed in the art motivated by the desire to prevent or minimized leakage, to incorporate about 4-25 wt% of thermally-activated binder fibers to an absorbent web of Makoui because: i) it is old in the art of making fibrous absorbent articles to form a nonwoven fabric having cellulosic fibers, where a binder fiber and/or a binder resin is/are used to bond a fiber matrix as exemplified in the teachings of Bair (col. 4 line 46 to col. 5 line 25; figure 2; see col. 4 lines 53-60, in particular); and, ii) Frankosky et al suggests combining both conventional techniques (resin bonding and 4-30 wt% of binder fibers) in forming fibrous batt to minimize fiber leakage (abstract, col. I line 47, lines 55-66). It is worthnoting that Franskosky et al also suggest using a latex resin bonding agent in an amount ranging from 10-30% by weight of the batt (col. 2 lines 15-17, lines 34-59).

The APA does not teach applying a binder on the web in an amount of .5-20 grams (claim 1) or 0.5-10 grams (claim 3) or 0.5-10 grams (claim 8) or 5-20 grams (claim 9) of dry matter per square meter of the web surface. However, it would have been obvious in the art to apply the binder on the web in an amount of .5-20 grams (claim 1) or 0.5-10 grams (claim 3) or 0.5-10 grams (claim 8) or 5-20 grams (claim 9) of dry matter per square meter of the web surface in the

modified process of the Makoui because, Franskosky et al implicitly suggest coating about 5 g/m^2 or more of the bonding resin onto the surface of the fibrous web to effectively prevent fiber leakage (note: Franskosky et al disclose that the final fibrous web has a weight basis in a range of 50-400 g/m^2 and further disclose that the bonding resin constitutes about 10-30% by weight of the final batt; 10% of 50 g/m^2 is equal to 5 g/m^2 (col. 2 lines 53-62; col. 3 lines 32-35); and, because those versed in the art would have determined, by routine experimentation, the suitable and sufficient amount of binder resin to apply on the web in order to effectively prevent fiber leakage on the web and the same time provide the least amount of resin binder material to reduce the cost of making the modified absorbent web of Makoui.

Lastly, the modified by either LeVan or Frankosky et al does not expressly teach the amount of dry matter in a resin binder; wherein the amount is 0.5-15% (claim 1) or 0.5-10% (claim 2) by weight to the web. However, it would have been obvious in the art to provide a latex resin binder having the amount of dry matter recited in claim 1 or 2 in forming the modified dryformed web of Makoui, because one in the art would have determined a suitable latex binder composition needed to be applied to the modified process of the APA (i.e. such is taken to be result effective variable routinely optimize by those versed in the art for the desired end-use of the absorbent paper); and because it is old in the art of making cellulose absorbent webs of the type taught by the Makoui to apply a dilute latex binder where the amount of solid binder is in the range of .about .5-5% by weight as exemplified in the teachings of Kennette et al (abstract; col. 1 lines 10-28; col.

3 lines 29-45). Only the expected result of effectively sealing the surface of a resultant dryformed absorbent web would have been achieved.

Note: it is a common practice in the art to determine, by routine experimentation, the amount of binder to apply to a fiber web in order to satisfactorily balance a trade-off between good resistance to defiberization or delamination, and good hand-feel or comfort on a resultant fiber web. The art would have understood and appreciated that the amount of resin binder needed to effectively bond and seal the modified dryformed absorbent paper of the APA depends on a number of factors such as the amount of binder fibers, amount of pulp fibers, thickness of the paper web, etc.

With respect to claims 2-4,7-9 and 23-24, these claims are rejected for reasons for substantially the same reason as numbered paragraph 2.

4. Claim 25 is are rejected under 35 U.S.C. 103(a) as being unpatentable over the references set forth in numbered paragraph 2 or 3 as applied to claim 23, and further in view of Walter et al (US 4,562,097).

It would have been obvious in the art to apply a latex foam binder onto opposing surfaces of a fiber web in a modified process taught by the APA or Makoui, because Walter et al teaches uniformly surface treating a fiber web with a controlled amount of a foam treatment composition such as a latex binder so as to reduce water-pickup resulting in lowering an energy consumption, and reducing water consumption, and improve the properties of the fiber web (abstract; col. 3 lines 3-64).

Response to Arguments

5. Applicant's arguments filed on 10-01-04 have been fully considered but they are not persuasive.

On page 7 full paragraph 1, Counsel argues that *"cellulose fibers are somewhat brittle, and the carding action ... tends to break some fibers and results in the undesirable presence of short lint or dust. However, it should be appreciated that a carded product having long fibers has a surface which makes it impossible to apply a latex layer on the surface seeing that the latex will be absorbed into the product due to the coarse structure existing in the carded fiber."* (emphasis added). It should be emphasized that the rejection is based on a dry-laid fibrous web and NOT a carded web (hence, the fibers in the fibrous web are expected to be short fibers as opposed to long fibers). Therefore, Counsel's assertion that the fibers in a fibrous web being long is off point. Equally important, contrary to Counsel's assertion, it is not impossible to apply latex binder layer on a surface of a carded web as evidence from the teachings of Makoui (col. 4 lines 31-36; figure 2).

As for Counsel's argument that *"[t]he prior art teaches that dust should be removed before preparing the final product, so that there would be no dusting problems ..."*, that's precisely the reason why one in the art would have been motivated to combine the two prior art processes for bonding or stabilizing a fiber web. By combining the two prior art processes, this obviates the need to remove dust from a fiber web prior to forming a final fiber web article.

As for Counsel's argument on page 8 regarding an application of a foam binder, it is respectfully submitted that, Counsel's argument is not commensurate with the scope of all claims, but claim 25. More important, as noted above, it would have been obvious in the art to apply a latex foam binder onto opposing surfaces of a fiber web in a modified process taught by the APA or Makoui, because Walter et al teaches uniformly surface treating a fiber web with a controlled amount of a foam treatment composition such as a latex binder so as to reduce water-pickup resulting in lowering an energy consumption, and reducing water consumption, and improve the properties of the fiber web (abstract; col. 3 lines 3-64).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Chuan C. Yao whose telephone number is (571) 272-1224. The examiner can normally be reached on Monday-Friday with second Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571) 272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sam Chuan C. Yao
Primary Examiner
Art Unit 1733

Scy
10-26-04